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PC DISK

M A G A Z I N E

VOL. 1 NO. 5

\$29.95

**DISKETTE
INCLUDED**

**USER
MANUAL**

**FILE MANAGER—
PART ONE:
INTEGRATED
FILE CONTROL
UTILITY**

**INFLATION
PROOFER:
PROTECT YOUR
NEST EGG**

**SHARK HUNT:
TEACHES BASICS
OF FRACTIONS
WITH GAME
REWARD**

**JIG JAGS 1:
COMBINES THE
CHALLENGES OF
CROSSWORD AND
JIGSAW PUZZLES**





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PC DISK M A G A Z I N E

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PC Disk Magazine is published 9 times per year, by Ziff-Davis Publishing Company, One Park Avenue, New York, N.Y. 10016. Subscriptions are available at \$179.00 for 6 issues. (residents of CA, CO, CT, DC, FL, IL, MA, MD, VT add applicable tax). POSTMASTER: send address changes to *PC Disk Magazine*, 39 East Hanover Avenue, Morris Plains, NJ 07950.

Editorial and Business Office: One Park Ave., New York, NY 10016. Editorial (212) 725-7770. For subscription inquiries and service write to *PC Disk Magazine*, 39 East Hanover Avenue, Morris Plains, NJ 07950.

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FROM THE EDITOR

Have we got a program for you! That's not a question, but a statement of my conviction concerning the contents of this issue. The idea of a software magazine is unusual to begin with—8 to 10 original programs every six weeks. Then there's the price—\$29.95 per issue (much less by subscription!). Where is the survival advantage for this strange animal in today's Darwinian software jungle? Our advantage is value, the benefit received for money spent. And the benefit of *PC Disk Magazine*, making the most of your personal computer, rests on the continued delivery of original, high-quality programs. The programs in this issue make an especially strong bid for survival.

INFLATION-PROOFER is both a tutorial on how to protect your investments from inflation, as well as a vehicle for evaluating investment portfolio performance under different inflation scenarios. Whether you're an economic optimist or pessimist, this program will help you find a secure basket for your nest egg.

In the Utilities category, *FILE MANAGER PART I* begins a three-part series which provides an integrated system for file handling. Within one command environment you can perform a wide variety of file operations with single key commands. With *FILE MANAGER* you may soon forget what DOS stands for (that's Disk Operating System, remember?).

You may notice that we changed our software categories this issue, making Education a separate category deserving special emphasis. Our fine educational feature this issue, *SHARK HUNT*, comes from the same people who provided *BANK IT* in *PC Disk Magazine*, Vol. 1 No. 3. *SHARK HUNT* employs the same design principle of education through entertainment, this time in the practice of converting fractions to percentages.

We are particularly pleased to introduce our first recurring feature in this issue, which is also a novel game concept. *JIG JAGS 1* is a different kind of computer crossword puzzle, challenging you to build a valid crossword puzzle from puzzle pieces. We hope you'll enjoy this game as much as we did, and will welcome the three new puzzles in each of our next two issues.

These are only four of our offerings this issue, and I'm already out of room. Let me close with my familiar pitch for software, noting that each of our issues thus far has contained at least two unsolicited software submissions. The opportunity is real, so let us hear from you.



SUBMISSION PROCEDURE

What sets *PC Disk Magazine* apart from most other publications is that we want and need your direct involvement. That's why we developed the "Software Submission Plan." If you're interested in submitting software you've developed either on your own or with others, let us know, and we'll send you the Submission Plan booklet. We would like to give you an outline of our Submission Plan here in order to stimulate your imagination and your interest.

The Software Submission Plan provides an opportunity for software authors to profit directly from their work. Under the plan, *PC Disk Magazine* pays every published author a royalty on every issue sold which contains a copy of his or her software. Best of all, this opportunity comes without elaborate restrictions. Our desire is to license software for publication only for the disk magazine format.

To explore the considerable opportunities for publication in *PC Disk Magazine*, write to us and ask for a Software Submission Plan booklet. The address is:

PC Disk Magazine
Author Submissions
One Park Avenue
New York, NY 10016

Once you've received the Submission Plan, read it over carefully. If you feel your software fits the requirements set out in the plan, complete the enclosed Software Submission Agreement and return it to us. No program code or documentation should be sent along with the Submission Agreement.

Following receipt of the Submission Agreement, the editors of *PC Disk Magazine* will evaluate the submission. At that point, we'll either indicate a lack of interest in the software or, if we are interested, we'll issue a submission authorization number and ask you to provide us with an executable copy of the program along with documentation on 5 $\frac{1}{4}$ " diskettes. Again, no material should be sent until you receive a submission authorization number.

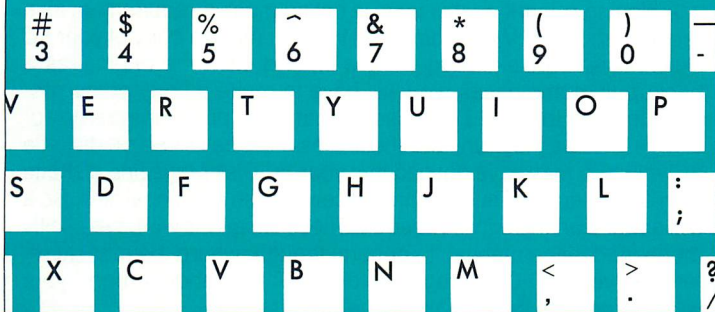
If we subsequently decide that we would like to publish the software in *PC Disk Magazine*, we will offer a Software Contract, which will include such items as royalties, advances, and program and documentation changes required (if any). You will be asked to complete and test any program modifications agreed to in the Software Contract, and *PC Disk Magazine* will conduct a formal validation of the program and documentation.

We estimate that this process, from our initial evaluation to publication, takes approximately three to six months. This estimate depends upon a number of factors, and the process may take more or less time for your submission.

We look forward to hearing from you.



TECHNICAL PREFACE



To help our readers make the most of PC Disk Magazine, we would like to provide some background information concerning the editorial diskette, the accompanying manual, and how to use both. We don't expect all of the following topics to interest all our readers. Nevertheless we have preferred to err on the side of comprehensive support, rather than leave any of our readers confused or bewildered. So we encourage everyone to at least skim this section to assure a solid background for the use of PC Disk Magazine.

USAGE REQUIREMENTS

PC Disk Magazine has been designed for use on an IBM Personal Computer with a minimal set of hardware components: a keyboard, a monitor, and the PC itself with at least 64K of main memory. The display unit can be a monochrome display adapter and monitor, or the color graphics display adapter with either a color monitor or an RF Modulator and TV set. The computer itself can be the PC or the PC-XT.

These three pieces of equipment are all you need to run the majority of *PC Disk Magazine* software. Wherever possible, we try to make the use of any other hardware optional. So, for example, many of the programs will generate printed output, but a printer is not required to use them. Occasionally, however, due to the nature of a program or its design, a particular piece of equipment will be necessary. When a program requires a piece of equipment not in the minimum configuration stated above, this component will be listed as a "Special Requirement" on the program's title page in this manual.

In regard to software, all *PC Disk Magazine* programs are designed to run under DOS 1.1 and DOS 2.0. Furthermore, all BASIC programs in the magazine are designed to run under Microsoft's

Advanced BASIC. Neither DOS nor Advanced BASIC are provided on the *PC Disk Magazine* diskette; they must be acquired separately. As a rule, these are the only outside software elements you will need to use *PC Disk Magazine*. We will occasionally publish a program which uses some additional, publicly available software product. Any such additional software will be listed as a "Special Requirement" on the program's title page in this manual.

A closing remark on this topic is not so much a requirement as a recommendation. We recommend that you make a copy of your *PC Disk Magazine* diskette to work with, and save the original as a backup. In some cases, you will have to make a copy of the program in order to use it. The reason is that some programs create additional files as they run, and these files must be stored on diskette as well. You may have noticed that your *PC Disk Magazine* diskette is write-protected. Thus it cannot receive these additional files. So a separate, working copy is needed. These situations will be explicitly mentioned in the manual. In general though, where the manual refers to "your *PC Disk Magazine* diskette" you should read "your working copy of the *PC Disk Magazine* diskette."

THE IBM PC KEYBOARD

In *PC Disk Magazine* we have tried to make our instructions as clear as possible by the consistent use of special key symbols. In addition to all the common typewriter keys, which we print as they would appear when typed, the IBM PC keyboard has a number of special keys. We have designed symbols for these keys, which are intended to resemble as much as possible the keys themselves. Since these symbols are used extensively throughout the instructions, we felt the following road map and glossary would help you, our reader, get any needed bearings.

PROBLEM HANDLING

We try our best to thoroughly test all *PC Disk Magazine* software, and provide instructions that cover all aspects of its use. Nevertheless, error-free software and exhaustive documentation are elusive goals. So if you have a problem, please contact us and let us help. Although we hope you will not need it, the address to write to is:

PC Disk Magazine
Problem Recovery
One Park Avenue
New York, NY 10016



THE FUNCTION KEYS

There are ten special keys called function keys located at the far left of the keyboard. They are numbered from F1 to F10. This stands for Function One, Function Two etc. These keys are often used to make single keystroke choices or commands.

THE ESCAPE KEY

The ESC key is used most often for exactly what its name implies, to escape (exit) from various functions and processes.

THE CONTROL KEY

This key is always used in conjunction with another key by pressing this key and the other key simultaneously. The purposes of the Control key vary widely depending on the application program.

THE TAB KEY

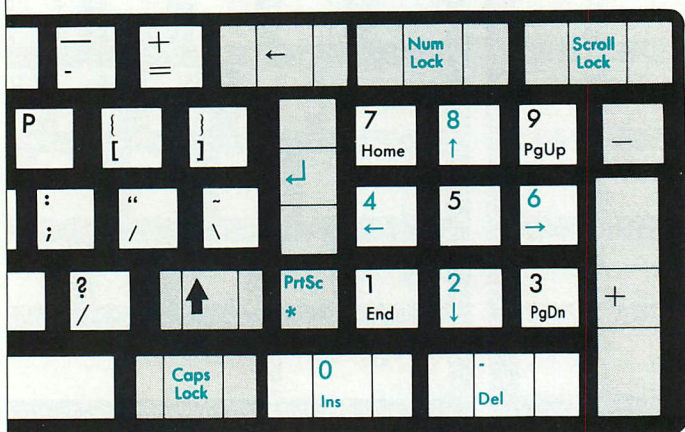
This key is commonly used for horizontal tabbing in text files. It is sometimes used by programs to allow rapid cursor movement during full-screen data entry.

THE BACKSPACE KEY

The Backspace key is used to correct typing errors. By simply pressing the key, the preceding character is erased and a new character can be entered.

THE SHIFT KEY

The Shift key is actually located on each side of the keyboard. It is used in conjunction with other keys to capitalize letters, get special symbols like: ! @ # \$ % * () and other special functions.



THE PRINT SCREEN KEY

This key is used with the Shift key to get a printout of exactly what is on the screen. In computer lingo this is called a screen dump, a dump of all the information on the screen to the printer. In *PC Disk Magazine* we also refer to this capability as "The IBM Print Screen Facility."

THE ENTER KEY

This is the most used key on the keyboard. Almost every time you need to give information to the computer, you have to press this key to ENTER that information. This key can also be thought of as the carriage return, since it works similarly to the RETURN key on a typewriter.

THE NUM LOCK KEY

Much like the Shift key, this key controls whether the numeric keypad will print numbers or act as cursor movement controls. You can tell that the NUM LOCK is on by pressing any of the number keys to see what is displayed on your screen. If it is the number, then the NUM LOCK is off. If it isn't, then NUM LOCK is on. To change the setting press NUM LOCK once.

THE CURSOR CONTROL KEYS

These are the arrows that point up, down, and to each side. The NUM LOCK has to be on for these keys to be functional. These keys control cursor movement within some *PC DISK MAGAZINE* programs. They will move the cursor in the direction of the arrow.



THE INSERT AND DELETE KEYS

These keys really mean the INSERT and DELETE keys. And that is exactly how they are used. INS is used to insert new information and DEL is used to delete unwanted information. They are commonly used when editing BASIC programs, and can often be used when running BASIC programs as well.



THE CAPS LOCK KEY

This key is used to save you from having to hold the shift key down all the time to get capital letters.



THE CONTROL AND SCROLL LOCK KEYS

This key combination deserves special mention because of its importance in BASIC, the language of most *PC DISK MAGAZINE* software. These keys used together will interrupt the processing of any BASIC program. The keys should be used with caution because some interruptions can require you to start an entire procedure from the beginning.

TERMINOLOGY

In the preceding section we identified the special key symbols used in this manual, and gave a name to each one. For example:



is called the Enter key. In our instructional narrative, it sometimes makes more sense to refer to a special key by its name rather than its symbol. Thus the key names in the preceding section are also special terms for the purposes of this manual. Familiarize yourself with the names to facilitate your use of the manual, and refer to the preceding section as a glossary of key names when necessary.

In addition to the key names, a few other terms and phrases are used in this manual that may be unfamiliar to you.

We commonly speak of putting a diskette in the "default drive." This may seem like a needlessly vague phrase. After all, we know a diskette drive always has a one letter identifier associated with it, so why not refer explicitly to that letter? The problem with using an explicit letter reference is that it can create confusion about what exactly you must do. In other words, operationally it does not matter whether you put the diskette in the A Drive, the B Drive or even the C Drive (if you have a third diskette drive). What matters is that you put the diskette *in the drive that is currently active*, i.e. the drive whose letter prompt currently appears on the screen. This is your "default drive" because any disk command without a drive letter will look at the diskette in this active drive. So when you put a diskette in the "default drive," you can then issue commands referencing that diskette without the use of letter identifiers.

Every start-up procedure for a BASIC program requires you to "Load Advanced BASIC into your PC." To run a *PC Disk Magazine* BASIC program, the BASIC Interpreter must be up and running on your machine—you must be "in BASIC." BASIC is really a program like any other. To start it you must load it from a disk into your PC and start it running. This is precisely what happens when you put

your DOS diskette (or any diskette with the file BASICA.COM) in the default drive and type:

BASICA 

By so doing you "Load Advanced BASIC into your PC."

When in BASIC, there are two kinds of commands: Direct and Indirect. Direct commands, like Load and Run, are executed immediately. Indirect commands are preceded by a line number; they are not to be executed at the time they are typed in, but when the program is run. You can assign a direct command to a function key, so that every time the function key is pressed, that command is executed.

One last bit of terminology concerns "control codes," such as a top-of-page code and a tab code. A control code can be thought of as a character just like a letter or a number, only rather than causing some character to appear, it causes an action of a different sort. It functions as a signal to a peripheral piece of equipment, like a printer, causing that device to perform a specific action, like move the paper to the top of a new page.

TEXT CONVENTIONS

Most of the textual conventions of this manual are fairly obvious. The use of special key symbols has been covered. The use of special key names in the narrative text has been discussed. That leaves two brief additional remarks concerning command lines.

The lines set apart from the narrative text, in bold print and a different color, are commands that should be typed in exactly as they appear. When two key symbols appear immediately next to each other in such a command line, they should be pressed simultaneously. For example:



means press the Shift key and the Print Screen key simultaneously, thereby printing a copy of the current screen on your printer.

There is one exception to typing in command lines exactly as they appear. When a command includes a phrase such as "some-name" or "programname" or "yourfile" you should replace that phrase (but not any punctuation) with a valid filename of your choice when you enter the command.

CALLING ALL PROGRAMMERS!!

If you have written software for the IBM PC that you feel would be of use or interest to others, *PC Disk Magazine* would like to know about it. Publishing is no longer just for poets and prosaists, but now it's for programmers too. Ask for our Software Submission Plan by writing to:

PC Disk Magazine
Author Submissions
One Park Avenue
New York, N.Y. 10016



INFLATION PROOFER

By C.R. Hunter & Associates

Special Requirements: None

Files Used: TUTOR.BAS
ASSUME. DAT
SCREEN

We live with an uncertain economic future. What has value today may have none tomorrow; what costs \$10 now may be worth \$50 in ten years. In the last 20 years, inflation has risen from 4 to 15 percent and dropped to 7 percent. How can you protect your savings from year to year; buy real estate, gold, or silver; or invest in the stock market or treasury bills? Find out with INFLATION PROOFER, by C.R. Hunter and Harry Browne.

The INFLATION PROOFER is a portfolio creator and analyzer that lets you test the value of your dollar when invested in gold, silver, Swiss Francs, stocks, real estate, and other investments. You can plan these investments in light of several economic scenarios set up by investment adviser Harry Browne, author of Inflation Proofing Your Investment (William Morrow and Company). Use this program



**THE
PORTFOLIO
IS
DESIGNED
WITH A
TEN-YEAR
TIME
FRAME**

to find out how rising or runaway inflation will increase the value of your certain investments and erode the value of others. If your investment strategy assumes ten percent inflation a year, you can determine where you will stand in ten years. And if you have your own predictions about the economy, whether boom or gloom, you can enter them and see how your money fares.

BACKGROUND

The *INFLATION PROOFER* portfolio is designed with a ten-year time frame. One of the goals in doing this was to avoid the need to constantly make new investment decisions. It eliminates both the need to recognize changes in short-term investment trends and the possibility of overreacting to events. A well-designed portfolio provides assurance that you'll do well, no matter what happens during the ten years and no matter how well or poorly you do in the short term.

In short, a carefully planned, balanced portfolio should allow you to forget about it—confident that it will take care of itself in any kind of future.

The program operates on the premise that inflation will do one of the following during the next ten years:

1. **LEVEL INFLATION**—It will level off at some constant rate, such as 10% per year.
2. **RISING INFLATION**—It will continue to rise in waves, as it has over the past 20 years.
3. **RUNAWAY INFLATION**—It will erupt into runaway inflation.
4. **SOFT LANDING**—There will be a "soft landing" in which inflation decreases to a very low rate (perhaps zero).
5. **DEFLATION**—There will be a sudden and traumatic deflation, similar to the 1930s depression.

INFLATION PROOFER is best used as a learning device to see how different economic scenarios can affect your investment. To use this program as an inflation-proofing tutor, first set up your desired portfolio and then examine it against the five inflation scenarios. Keep track of what investments fair best and worst under each scenario. At the same time you might want to look at what Mr. Browne would consider the ideal portfolio for each scenario, and compare the performance of your portfolio against this optimal portfolio. Then create a new portfolio with this information in mind. Once you have a portfolio that seems to work in all five scenarios, change the inflation assumptions of the scenarios and see if your investments still maintain their value. After you have done this several times, you should have a better understanding of how to build an inflation-proofed portfolio. Remember, the ideal portfolio will do well in all five inflation scenarios, but will do best in one or two. Create a portfolio based on your view of the economic future. Then if you're right you should do very well, and if you're wrong it shouldn't hurt you too badly.

Note: Neither Ziff-Davis nor the authors make any representations or warranties concerning the accuracy of the forecasts or any other data contained in *INFLATION PROOFER*. In no event shall either Ziff-Davis or the authors be liable for any consequential damages suffered by any user of *INFLATION PROOFER* including, but not limited to, lost profits.

ASSUMPTIONS REGARDING THE FUTURE

Portfolios are built on one's expectations regarding the future. Since inflation has become a dominant force in today's economy, these expectations usually focus on the future of inflation. Begin creating a ten-year portfolio by betting on whether inflation will continue to rise or will end. If it does end, will the ending be tranquil or traumatic?

Use your opinions to choose those investments you presume will do well. Once you define your expectations, this task will seem pretty automatic. For example, if you expect more inflation, gold is the logical, profitable choice.

The table below shows the values that the program assumes each of the 11 available investments would achieve under Harry Browne's inflation assumptions for each of the five inflation scenarios. These values represent the worth ten years from now of a \$100 investment made in each investment category.

ESTIMATED FUTURE PRICE

Adjusted for Inflation
(Purchasing Power in current dollars)

Investment	Level Inflation	Rising Inflation	Runaway Inflation	Soft Landing	Deflation
Gold	86	211	204	44	54
Silver bullion	150	150	119	150	150
Silver coins	123	122	267	123	170
Swiss franc					
w/interest	125	125	125	125	125
Stocks (DJIA)	107	40	41	259	40
Leverage					
stocks	210	63	102	548	16
Real estate	77	107	46	53	54
Cash	39	24	0	67	120
Treasury bills	109	96	1	121	181
Treasury bonds	141	62	0	347	465
Long-term \$					
debts	(110)	(59)	0	(252)	(455)

The inflation assumptions underlying these future values can be examined and changed within *INFLATION PROOFER*.

START-UP

To start the *INFLATION PROOFER*, load DOS into your PC, then type:

BASICA 

Then insert your work copy of the *PC Disk Magazine* diskette into your default drive and type:

RUN "TUTOR 

PROGRAM STRUCTURE

INFLATION PROOFER starts by assuming that you have a specific amount that you would like to invest in a portfolio. It asks you to create a portfolio by dividing that amount between 11 investment cate-

**USE
YOUR
OPINIONS
TO CHOOSE
THOSE
YOU
PRESUME
WILL DO
WELL**

gories. Once you have set up your portfolio you may then look at a ten-year value projection under any of the program's five inflation scenarios. At the end of each scenario valuation, you may look at Harry Browne's portfolio suggestion for that scenario. You may then change Mr. Browne's assumptions regarding inflation by typing "N" to the question "Do you want to project your portfolio in a different scenario?". Now you may examine and change the inflation assumptions of any of the five scenarios. After you have made your changes, you can revalue your old portfolio under your new inflation assumptions, or go on to create a new portfolio. By going through the same steps, you may examine as many portfolios and change as many scenario assumptions as you like. (Note: Once you change the inflation assumptions for a scenario, these new assumptions remain in effect until you change them again or restart the program. To restore Harry Browne's initial scenario assumptions, you should exit the program and then run it again.)

THE PROGRAM

After start-up, the following question will appear: "Do you want the introductory text?". If this is the first time you are running the program, type "Y" and several screens of information will appear. Press the Enter key to read through this information. As you progress through the introduction, you will see a screen detailing the five inflation scenarios, and another listing 19 portfolio investments. If you would like an explanation of any of these, just type the corresponding number and press:



or just press the Enter key to continue. If you have already run the program once and wish to skip these screens you may do so by typing "N".

CREATING A PORTFOLIO

Once you have read through the introduction, you can create your own portfolio using 11 investment categories selected for you out of the possible 19. An investment category will appear on your monitor. When prompted, type in the amount you wish to invest and press:



to complete your entry. (Do not use commas when you are entering dollar amounts.) The program will immediately prompt you for the next category. If you do not want to invest in any particular category, just press:



When you have entered an amount for each of the 11 categories, you will see the five inflation scenarios. In order to see how your money fares in a particular scenario over a ten-year period, type in the number of that scenario and press:



A portfolio projection screen will be displayed. Each investment

category will appear with your initial investment and the value of your investment at the end of ten years in current dollars, along with a total and the real dollar percentage for profit or loss. If you would like to compare your strategy to Harry Browne's optimal portfolio for this scenario, type:

Y 

and the program's balanced portfolio will appear in the same manner with a profit-and-loss comparison between both portfolios.

At this point in the program, you may judge your portfolio in light of all the other inflation scenarios by typing:

Y 

in response to the following prompt, "Do you want to project your portfolio in a different scenario?" When you have gone through all the scenarios you want, type:

N 

in response to this different scenario prompt and you will get a chance to review the inflation assumptions for each scenario and change them as you see fit. To do this, pick one of the five inflation scenarios to examine and/or change, followed by the Enter key. If you pick "Runaway Inflation," you can see that the program's predictions are quite drastic. You may want to tone down the tenth year. Simply type:

10 

to open the inflation assumption for that year for editing. Now change that figure by typing in your estimate and pressing the Enter key. You can change as many assumptions as you like. When you have finished changing assumptions for a given scenario, press:



and you will have the opportunity to change the assumptions of another inflation scenario. When you have examined and/or changed all the assumptions you want, answer "N" to the prompt to Review/Change more assumptions. You will then be asked if you want to go back and project your portfolio under these new scenario assumptions. Answering:

Y 

allows you to go back through the portfolio valuation cycle under the different scenarios, this time with your new assumptions in effect. When you have reviewed these results, you may come back and change the scenario assumptions further. Bear in mind that when you change assumptions, the new assumptions remain in effect until you change them or restart the program.

If you don't want to examine or change the assumptions further, and you don't want to do further projections for the same portfolio, you are then asked if you would like to create a new portfolio. Answering "Y" will take you back to the portfolio creation process. Typing "N" will cause the program to end, with a few closing remarks.

 **ICK**
ONE OF
THE FIVE
INFLATION
SCENARIOS



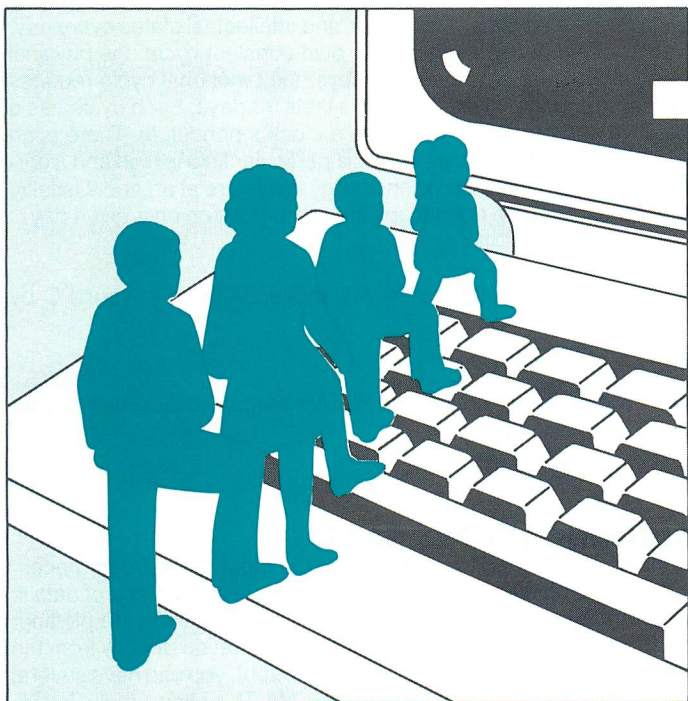
A quick look at the editorial diskette for this issue of *PC Disk Magazine* reveals a fairly radical editorial decision: all BASIC programs have been published in original source code. Consequently, these programs can be listed and copied in their entirety. We at *PC Disk Magazine* have chosen neither to copy-protect our offerings, nor to make our program code inaccessible—a rather sharp departure from traditional software distribution.

WHY?

The most important reason behind our decision is our desire to make *PC Disk Magazine* of the greatest possible use to you. This desire involves several considerations. First, we want you to be able to learn from these programs. To do so you must be able to study the source code in order to understand the design concepts and programming techniques employed. Second, we want you to be able to adapt these programs to your own needs. You may choose to modify some programs, or expand them, or include them in programs of your own. Once again, you need the source code to do this. The third consideration is that to have the flexibility to use *PC Disk Magazine* most extensively, to modify and expand programs, to create different versions and to experiment, you must be able to make copies of *PC Disk Magazine* materials. Thus, our objective—to establish the closest possible relationship between this magazine and its readers—was the most compelling reason to publish copy-able source code.

Another reason worth mentioning is space. The same BASIC program requires 10 to 50 percent less storage space on our editorial diskette in source code than it would in compiled BASIC. So publishing BASIC programs in source code lets us give you more software in the fixed amount of diskette space available.

Now that you understand the reasons for our decision, we hope you will minimize our risk by honoring the legal copy restrictions that apply to *PC Disk Magazine*. Use the magazine as extensively as you like for yourself, but do not give listings or copies of our software materials to others. Be aware that the contents of *PC Disk Magazine* are copyrighted private property. Your technical freedom to copy these materials implies no legal right to distribute them. We ask that you act responsibly in your use of *PC Disk Magazine* and not abuse the spirit of open exchange. For our part, we will continue to make our material as useful to you as possible, with the expectation that, properly understood, this policy will best serve you our readers.



BIORHYTHMS

By C-Level Software

Special Requirements: None

Files Used: BIO.BAS

Like the clocks on our wrists, on the nightstand, or on the dashboard, we humans unconsciously follow predictable schedules. Our physical, emotional, and intellectual energy levels all fluctuate in constant cycles which influence how we feel and how we behave. These are our biorhythms.

The BIORHYTHMS program plots these emotional, physical, and intellectual energy levels for any given period of time. Because biorhythm cycles begin at birth and maintain constant cycle lengths, this program uses an internal calendar to plot anyone's biorhythm based on his or her birth date. By consulting BIORHYTHMS, you'll know in advance when to offer advice and when to hold it, when to expect red-letter days, and when it's better to stay home and read a good book instead of taking a cruise.

BACKGROUND

Whether it's the activity level of crustaceans, the circadian cycle of man in clinical isolation, or the reappearance of comets, all bodies manifest certain rhythmic tendencies. Although they vary within species and among individuals, biorhythms exist in animal, vegetable, and mineral.

In homo sapiens, these recently discovered rhythmic energy levels affect our physical, emotional, and intellectual states every day. Each of the energy levels has its own constant cycle: the physical energy cycle repeats every 23 days, the emotional cycle requires 28 days, and the intellectual cycle lasts 33 days. Each cycle has a positive and negative swing, like a clock's pendulum. There is an upswing when the energy level in a particular field is high and a corresponding downswing when energy levels are at an ebb. Usually, the three cycles do not occupy the same position on a given day.

START-UP

To start *BIORHYTHMS*, load Advanced BASIC into your PC by typing:

BASICA 

Then put your work copy of the *PC Disk Magazine* diskette into your default drive and type:

RUN "BIO" 

RUNNING THE PROGRAM

Running *BIORHYTHMS* requires you to input certain data necessary for the plotting of a biorhythm. One necessary piece of data is the birthday and name of the person whose chart you are plotting. *BIORHYTHMS* allows you to enter this information directly from the keyboard or from a file. In using a file for input, you can have several people's names and birth dates in one file. This allows multiple biorhythm plots to be done automatically by the program. You can create these files using the EDLIN editor or any other text editor (see "Creating Input Files" below).

The first question that *BIORHYTHMS* will ask you is whether you want to run the program in automatic mode, by using a pre-existing file of names and birth dates as input. Press:

Y

to answer the prompt and you will be shown a directory of the current drive, with one of the files chosen as the default input file. If this default file contains the information you want, press:



and the program will proceed. Otherwise, type in the name of the file containing your input data, and press the Enter key. The program will move on to the next data entry level. If you answered:

N

to the "Automatic Listing" prompt, the program will expect input from the keyboard, rather than a file, and you will subsequently be prompted accordingly.

Whether you specify file input and name your input file, or specify keyboard input, you will next be asked what output device you want for your plot. This may be a File, the Screen, or a Line printer. Type in "F", "S", or "L" as appropriate. If you choose "F", the plot will be stored in a file without being printed or displayed. If you choose "L", the plot will be printed. "S" will cause it to be displayed on the screen (where you could, additionally, use the Print Screen command to obtain a hard copy of it).

Next you will be asked for the date at which you wish the plot to start. The default date is the current system date, as it is stored in DOS. Respond to the prompts with just the Enter key to accept the displayed values, or enter a new month, day, and year. Follow the subsequent prompt to enter the number of days you wish the plot to cover. (The default is 47, which you select by just pressing the Enter key, and the maximum is 99). If you have not chosen to input data from a file, you will next be asked to enter the name of the person whose plot you are creating and their date of birth. Press:



after each number you enter for month, day, and year. *BIO-RHYTHMS* will then ask you to verify this information. By typing:

N

you can repeat the above steps to correct any misinformation. These last steps will be skipped if you are inputting names and birthdays from a file.

I GOT RHYTHMS

What the screen or the printer will then display (or your output file receive) is something resembling a DNA helix. The letters "P," "S," and "I" correspond to the Physical, Sensitive (or Emotional), and Intellectual energy levels. They will be plotted somewhere between -1 and +1, which indicate the low and high energy levels, respectively. Zero is a neutral value.

If, because of the number of days chosen for the plot, it will fill more than one screen, the program will display the title information and the plot until it fills up the screen. It will then stop, and prompt you to press any key to see another screen's worth of the plot.

If you are taking your input data from a file with several sets of names and birthdays in it, the program will display or print the plots one after another. Pressing:



stops the display or printing of the current plot and gives you three options. Press:

S

to skip the current plot and go on to the next one in the file. Press:

E

to exit the program and return to DOS. Press:



to continue plotting from where it left off.

 **THE
SCREEN OR
PRINTER
WILL
DISPLAY
SOMETHING
RESEMBLING
A DNA
HELIX**

THE
LAST LINE
OF THE
FILE
MUST BE
JUST AN
ASTERISK

If you have chosen a file as your output device, you will be prompted to enter a name for that file. Use any filename acceptable by DOS. *BIORHYTHMS* will automatically add the extension ".TXT". Once that file is created, you may use DOS commands to display or print it.

When the plot has been completed, you will be asked if you want to do another. Type:

Y

to return to the first step (the "Automatic Listing" prompt), or

N

to return to DOS.

CREATING INPUT FILES

BIORHYTHMS will run automatically from input files containing names and birthdays. To work properly, such an input file must follow a specific format: for each person to be charted, there should be a name on one line followed by their birth date in the form MM/DD/YY on the next line. These two lines for different people can be entered one pair after another, with no intervening special characters. The only other requirement is that the last line of the file be just an asterisk, so *BIORHYTHMS* will know when it has charted the last person.

You can create such a file using the DOS EDLIN editor. While in DOS, and with the file EDLIN.COM on the diskette in your default drive, type:

EDLIN x:filename.TXT 

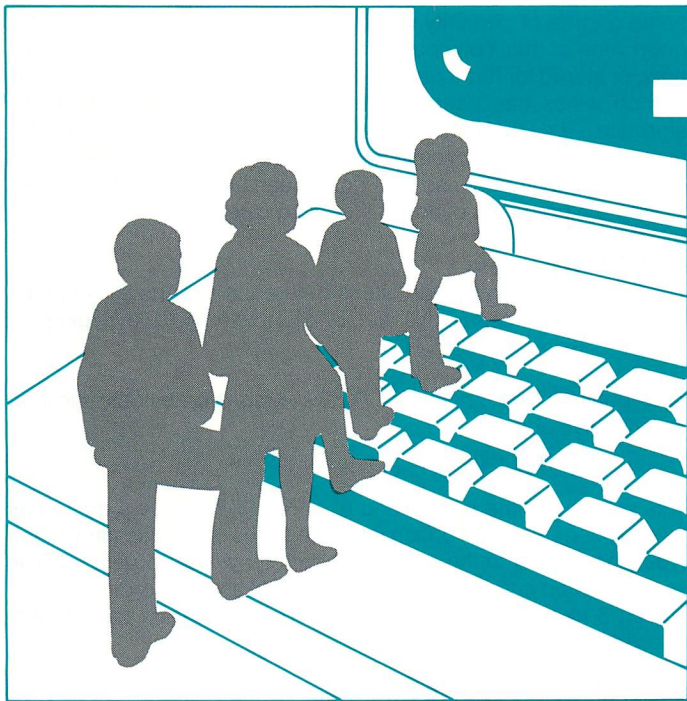
where "x" is the drive containing your *BIORHYTHMS* work diskette, and "filename" is any name you would like to use. (If you have a single drive system, use a drive letter for "x" that is different from the current default drive letter, e.g. "B" where "A" is the current default. The system will then prompt you to change the diskette in the drive, allowing you to put in your *BIORHYTHMS* work diskette, before editing begins). In this way your input file will be on the same diskette as your *BIORHYTHMS* program, thereby making it directly available for access. After this invocation, the EDLIN prompt, an asterisk, will appear. Next type:

I 

to enter the EDLIN text insert mode. The file should be set up with the person's name on the odd lines and the birth date on even lines. The last line of your file should be an "*". When you have finished creating your file, type:

 Z  E 

EDLIN will then store your file on the *BIORHYTHMS* diskette. The file can then be referenced in *BIORHYTHMS* during the execution of an automatic listing.



WINE DATA 1

By Morris Effron

Programmed by Henry Bilenchi

Special Requirements: None

Files Used: WINE1.DAT

WINE1.BAS

Do you know a Sancerre from a sommelier? After you've spent ten minutes studying a restaurant wine list, do you still lack the courage to order anything but a glass of water? Well, your days of wine and neurosis are over. PC Disk Magazine brings you its first installment of WINE DATA, a series of data files containing a wealth of information about the wines of various countries. This issue treats the wines of France and promises you enough oenological knowledge and confidence to impress your friends, stock your cellar, and terrify wine stewards.

BACKGROUND

Hundreds of unpredictable factors determine the quality of a wine.

**YOU
CAN
DETERMINE
WHETHER
ANY
PARTICULAR
BOTTLE
CONTAINS
A GOOD
WINE
OR NOT**

These variables make today's selection of wines richly varied in quality and cost, and often hopelessly confusing to the uninitiated.

Fortunately, there is some agreement among wine connoisseurs regarding the expected quality and the required aging time of specific wines. Wines are judged according to the year they were bottled and the area where they were produced. Armed with an organized collection of this information, you, too, could determine with some degree of certainty whether any particular bottle contains a good wine or not. You could also tell whether it should be enjoyed now, or stored for further aging. In *WINE DATA 1*, the consensus on French wines has been consolidated into a rating system and stored in a data file, categorized by year and region. The accompanying program allows you to access this information by year or region. You may further use the Print Screen capability of the IBM PC to create a hardcopy of any of the rating displays.

START-UP

There are a few preliminary steps before the experts' files can be revealed to you. Load Advanced BASIC into your PC by typing:

BASICA 

Then put your work copy of the *PC Disk Magazine* diskette into your default drive and type:

RUN "WINE1 

This will invoke the main menu of *WINE DATA 1*. This menu has three options. The first option rates the wines of a particular vintage (year) according to the region in which they were produced. The second option rates the wines from a single area according to year. Option 3 exits you from the *WINE DATA 1* program back to Advanced BASIC.

RATINGS BY YEAR

YEAR : 1971		
REGIONS	RATING	DRINKABILITY
RED BORDEAUX	8	NA
SAUTERNES	8	NA
RED BURGUNDY	8	NA
WHITE BURGUNDY	8	NA
RHONE	8	NN
CHAMPAGNE	9	NN
CHARLIS	9	OO
WHITE BORDEAUX	8	OO
LOIRE	8	OO
10 The best	5 Average	A Can take further aging
8-9 Very fine, superior	4 Fair	O May be too old
6-7 Good, above average	1 Poor	N Drink now
		Y Lay away
		# No info.

<F4> Select Region, <F1> More Region Information, <Esc> Return To Main Menu

If you chose option 1 on the main menu, a prompt on the bottom of the menu screen will ask you which year you wish to see rated. The program contains details of French wines produced between the years 1961 and 1981, so when you see the prompt

YYYY

type in a year in this range and press:



If, by accident, you type in a year that is not covered by the data file, the program will not accept it. Instead, the display will continue to show you the

YYYY

prompt until you enter a valid year.

A screen will now list the various wine-producing regions of France. Next to the column of regions will be a column of ratings followed by a second column of one-letter codes. The number is the rating for the wine from that particular region for that particular year. The letters are a code to give further information about the ratings. At the bottom of the screen is a legend explaining the ratings and codes.

The ratings range from one to ten. Ten is the best rating a wine can receive, and one is the worst. Wines rated five can be considered average, wines rated below four are poor, and those above seven are quite good.

The letter codes concern the timeliness of that particular wine. Wines that have had just the right amount of aging should be drunk now and are therefore labeled with an "N." Certain wines which may benefit from further aging will carry the additional label "A." Wines that are still too young to drink will have a "Y" after the rating; wines that have reached old age are labeled "O." Naturally, these labels are based on the subjective judgements of experts, just as the ratings themselves are, and should not be taken as absolutes.

There is one additional database in *WINE DATA 1*. This contains a listing of some of the most popular and well-known wines from each region. This data can be accessed from either the Ratings by Region or Ratings by Year display. From the Ratings by Year display, you must first select the region for which you would like this additional information. Notice that the first region on the list is highlighted. The highlighted region is the one currently selected for additional information. You can change the region selected by pressing:



to move the selection highlight up or down respectively. When the region you want is highlighted, just press:



to view the representative wine list for that region. Then, press:



 **THE
ONE-LETTER
CODES GIVE
FURTHER
INFO
ABOUT THE
RATINGS**

to return to the Ratings by Year screen. To exit from the Ratings by Year screen and return to the main menu, just press:

Esc

when at this screen.

RATINGS BY REGION

REGION : WHITE RHODOS					
YEARS	RATING	DRINKABILITY	YEARS	RATING	DRINKABILITY
1961	9	0	1973	7	N
1962	9	0	1974	7	N
1963	7	0	1975	5	N
1964	8	0	1976	7	N
1966	7	0	1977	5	N
1967	7	0	1978	7	N
1969	7	N	1979	8	MA
1970	7	0	1980	6	V
1971	8	N	1981	7	V
1972	6	0			

10 The best	5 Average	A Can take further aging	Y Lay away
9-9 Very fine, superior	4 Fair	O May be too old	# No info.
6-7 Good, above average	4 Poor	N Drink now	

(F1) More Region Information, (Esc) Return To Main Menu

A feast for the taste buds—by region

**THE
RATING
CODES
USED HERE
ARE THE
SAME AS
THOSE
IN THE
RATINGS
BY YEAR
DISPLAY**

To see the wines of a particular region rated by year, choose option 2 on the main menu. A prompt will appear at the bottom of the main screen along with a numbered list of the regions covered by this data file. Answer the prompt by entering the number of the region you wish to examine (there is no need to press the Enter key). The screen will then display the wine ratings for that region for all years covered by the data file. The rating codes used here are the same as those in the Ratings by Year display.

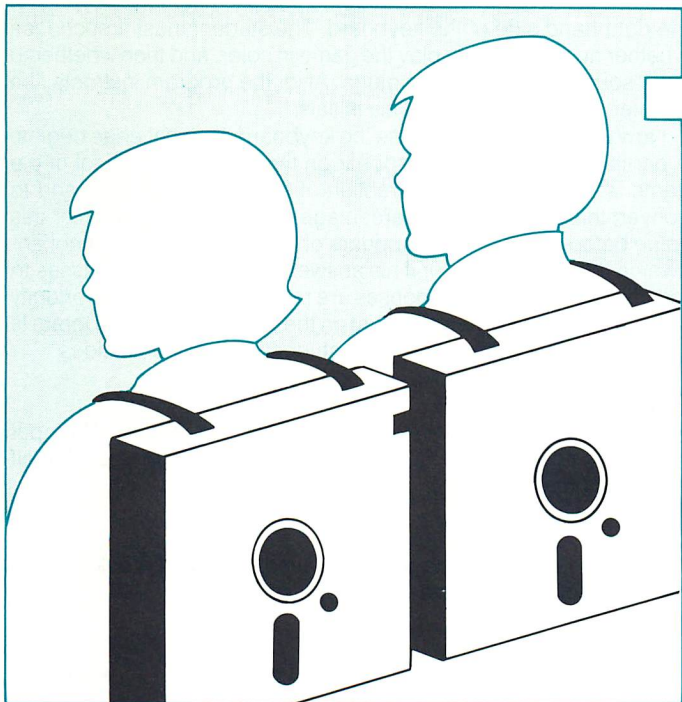
From this screen, it is also easy to access further information on a region. Press:

F1

and a new screen will appear with the names of the major wines from that region. Pressing:

Esc

returns you to the Ratings by Region display. You can now press the Escape key again to return to the main menu. You may then exit the program from the main menu by choosing option 3.



SHARK HUNT

By Psychotechnics, Inc.

Special Requirements: Color/Graphics Adapter

Files Used: SHARK.COM

MONTM

SHARK

There are some things you hate to do, even though they're good for you. Studying arithmetic, for example, loses all its appeal if it means a child must diligently pore over the textbooks or work out seemingly endless calculations. Just as a student may become distracted in an impersonal classroom setting, so will his attention wander from these uninteresting homework assignments.

The question is how to solve this predicament. Psychotechnics, Inc. offers a solution with SHARK HUNT, an exciting computer game that encourages a student to successfully convert fractions to percentages. You can employ the computer as an effective teaching tool because it allows students to progress at their own pace. In addition, students are not discouraged when they enter wrong an-

 **HE
STUDENT
MUST ENTER
THE VALUE
BEFORE
"TIME'S UP!"**

swers. The program acknowledges mistakes and corrects them with non-judgmental replies.

BACKGROUND

Before the game begins, the program helps familiarize the student with the process of entering information into the computer. All responses in the game must be entered using the numeric keypad on the right-hand side of the keyboard. The student must first choose whether he would like to play the game in color, and then whether to have sound accompany the game. Also, the program instructs him to enter a code to represent his initials.

Now that the student can use the keyboard, the challenge begins. A partially-shaded grid will appear on the screen; the object of the game is to recognize what fraction of the figure is shaded and to convert this fraction into a percentage. The student must enter this value before "Time's up!" appears on the screen. If he cannot answer in the allotted time or if his answer is incorrect, play passes to the opponent. Correct responses are rewarded with the opportunity to prove one's skill in a shark hunt on the open seas. The program is designed for two players, but one student can play both sides.

START-UP

To set out on your *SHARK HUNT*, you must be in DOS. Then put your work copy of the *PC Disk Magazine* diskette in your default drive and type:

SHARK

After the Telemath title page is displayed, you will be asked, "Do you want color?" If you have a color display, press:

1

You will then be asked, "Do you want sound?" If you would like sound effects to urge you on, press:

1

The main menu for *SHARK HUNT* appears next. The screen shows the following display:

F1 = Help

Enter = Play

If you are unsure of the rules of the game, type in a question mark so the Help menu can give you a quick run-down of the rules. The seasoned hunter simply presses the Enter key to begin playing the game.

A special feature of Telemath programs is the hidden Parent/Teacher option, which allows you to change the student's allotted response time. To use this option, type:

7714

when the main menu is displayed. No following Enter key is needed and the numbers will not appear on the screen. What does appear is the current response time, in seconds. The standard response time is fifteen seconds. Using the numeric keys of the right-hand

keypad, type in a new number to either increase or decrease the current amount of time. Then press:



The new response time will remain in effect until the current run of the game is over. If you do not wish to change the time, just press the Enter key alone. By consistently answering correctly in less and less time, the student shows that he or she is mastering the concept of converting fractions to percentages.

The final step before the hunt begins is for the student to type in a code for his initials. The next screen shows the letters of the alphabet with their corresponding numbers, 1 to 26. The student is asked to enter the number that corresponds with his first initial and then to repeat the process for the second initial. The same must be done for the initials of the second player.

PLAYING THE GAME

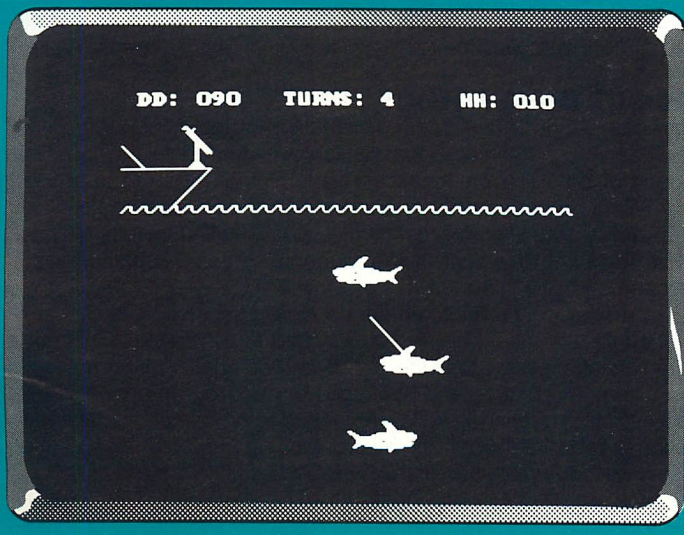
The game screen consists of a partially-shaded figure. Beneath it appears the question, "[Initials], what percentage of the box is shaded?" The student must type in the percent and then press:



The program acknowledges a correct response with the message: "That's right! Get ready to go on a shark hunt!" If the wrong answer was entered, the program lets you know by displaying: "Wrong!! Answer is: [correct answer]." Play will then pass to the other player. The third possibility is that the question was not answered in the allotted time. The screen shows: "Time's up!! Answer is: [correct answer]," and play passes to the other player.

A counter at the top of the screen keeps track of each player's score and the current round of the game.

SHARK HUNT



The reward screen

**THE
NEW
RESPONSE
TIME
REMAINS IN
EFFECT
UNTIL THE
CURRENT
RUN IS OVER**

**WHEN
YOU SHOOT
A SHARK,
YOU SCORE
THE NUMBER
OF POINTS
PRINTED ON
ITS BODY**

When you answer correctly, you are allowed to go on a shark hunt. This is your opportunity to score points!

Three sharks will swim across the screen and it's your duty to rid the waters of these great whites. You are equipped with three harpoons, which you shoot by pressing:



When you shoot a shark, you score the number of points printed on its body. The values range from ten to forty points. You should note that if a shark swims beyond the firing range, it will not reappear during your turn, so you should fire all three harpoons during each shark hunt. When you are out of ammunition, the program lets you know with the message: "All 3 harpoons have been shot!"

After six turns, the player with the most points wins and is given three free shark hunts.

EXITING

The winner's initials and final score will flash on the screen when the game ends. They continue flashing until you decide either to play again or to go on to something else. Press:



to return to the main menu. Now you can press:



to play again, or press:



to return to the color question. At this point you could choose to change your color and/or sound settings and return to the game, or you can press:



one more time to exit the game and return to DOS.

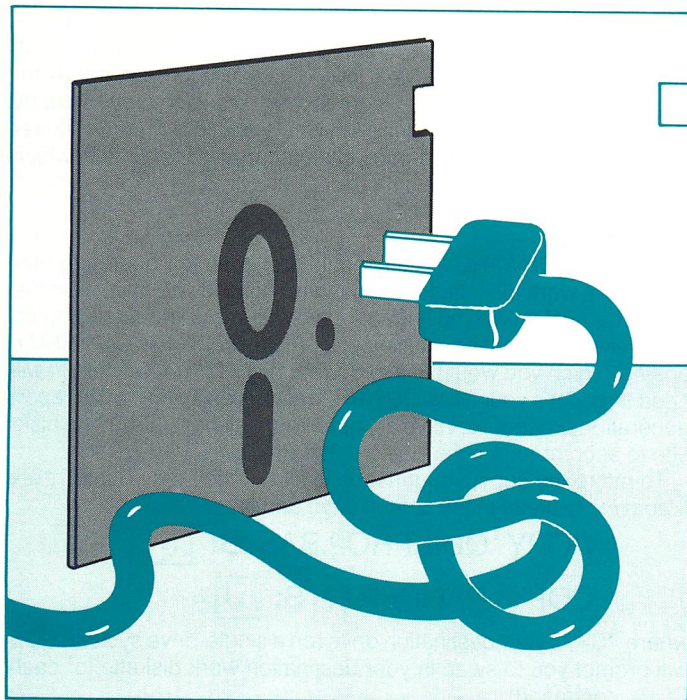
Once adults have helped the young student set up *SHARK HUNT*, the student can continue to play with a minimum of supervision.

ABOUT THE AUTHORS

SHARK HUNT is one of 80 Telemath programs, now available through Psychotechnics, Inc., which are geared to the learning needs of children from kindergarten to eighth grade. Programs in the Telemath series were evaluated by carefully testing students both before and after they used these aids. The final results showed significant improvement in the students' grasp of mathematical concepts.

Programs in the Telemath series were conceived and partially written by teachers. They were designed to help reinforce mathematical concepts through the use of fun and challenging games.

Further information and packages of the programs themselves are available directly from Psychotechnics, Inc. We plan to offer additional selections from this award-winning library of educational software in future issues of *PC Disk Magazine*.



MINI-QUIKPRO II

By ICR FutureSoft

Special Requirements: Mini-Quikpro I

Files Used: QUIKPRO2.BAS

RANDPRT

RANDPRT2

Data files created with Mini-Quikpro I

In the last issue of PC Disk Magazine (Volume 1, Number 4), we introduced MINI-QUIKPRO I. This program created BASIC programs to handle all sorts of lists and other data base applications. But while it let you enter and retrieve information, it didn't allow you to print out the lists.

Of course, you will often want to print lists of information in part or in their entirety. For example, you may wish to have a listing of projects due this week, of your friends' and relatives' birthdays, or of the names and addresses of those people who sent you a holiday card last year.

MINI-QUIKPRO II is more than a simple data reporting program. It is a BASIC program generator that frees you from the drudgery of

**IT
GENERATES
PROGRAMS
THAT
LET YOU
PRINT
DATA
FILES
CREATED
EARLIER**

writing print formatting programs. Since it uses plenty of REMark statements, you can see what each part of the program does, and learn a lot about BASIC programming. Finally, it is a building block toward creating high quality applications programs.

BACKGROUND

Like *MINI-QUIKPRO I*, *MINI-QUIKPRO II* automatically writes a complete BASIC program ready for you to run, list, copy, and modify as you choose. It generates programs that let you print, in any format, data files created using *MINI-QUIKPRO I*. You may print reports for any or all the records on file. Records may be selected by key or by searching for a matching string anywhere within a record. The resulting report will print the appropriate records in the order in which they were entered into the data file.

START-UP

To use *MINI-QUIKPRO II*, you should first copy the operating programs to a work diskette (or to your hard disk). If you have a single-disk drive system with no hard disk, the programs should be copied to a diskette containing the files you created with *MINI-QUIKPRO I*, against which you would like to do reporting. *MINI-QUIKPRO II* will need to access your *MINI-QUIKPRO I* data files as part of its report generation procedure. Have as much room as possible on the diskette to accommodate the files created by *MINI-QUIKPRO II*.


To make the copy, you must be in DOS. Then put your *PC Disk Magazine* diskette in the default drive and type:

COPY QUIKPRO2.BAS B: 

COPY RANDPRT? B: 

where "B:" is your destination drive (on a single-drive system, DOS will prompt you to swap in your destination work diskette for each COPY command).

With your work copy of *MINI-QUIKPRO II* made, you should load BASIC into your PC by putting a diskette with the file BASIC.COM in the default drive and typing:

BASIC/S:255 

(Don't forget the "/S:255"). Now replace that diskette with your work copy of *MINI-QUIKPRO II* and type:

RUN "QUIKPRO2 

THE MAIN MENU

The *MINI-QUIKPRO II* menu presents two options: you may either start the program or exit to DOS. To start the program, type:

1 

You will then be asked to enter the name of the Filing Program you created with *MINI-QUIKPRO I*. Enter the name followed by the Enter key. *MINI-QUIKPRO II* will then ask which drive has the disk with that program. Type the letter of the drive, without a colon, followed by the Enter key. Note: If you have a system with more than one drive, this allows you to have your Filing Program and work copy of *MINI-QUIKPRO II* on separate disks. If you do, be sure to put your Filing

Program in the appropriate drive. With the program name and drive location entered, press:



MINI-QUIKPRO II will now look for the Filing Program specified in the drive indicated. When it is found, MINI-QUIKPRO II will display the File Design Screen you had created with MINI-QUIKPRO I, which is also your Record Layout. If this data file can't be found, MINI-QUIKPRO II will display a message and ask again for the program name.

Once the Record Layout appears, MINI-QUIKPRO II will ask what kind of report you wish to create. You must choose between a (F)ree Form or (C)olumnar report. A Free Form report prints one record to a page, and you can mix text with the information from the record. You can use some or all of the fields and place them in any order on the page. This type of report will print labels, form letters, and many other useful forms.

A Columnar report lists one record on each line, with all the fields lined up in columns. You can specify that some or all of the columns be included. You can also specify that some or all of the numeric fields be totaled at the bottom of the report.

Make your selection by typing "F" or "C" followed by the Enter key.

DESIGNING A FREE FORM REPORT

**YOU
MUST
CHOOSE
BETWEEN
A FREE
FORM
OR
COLUMNAR
REPORT**

A screenshot of a computer screen showing a data entry form. On the left side, there is a vertical column of letters from A to Z. The main area of the screen is dark with white text. At the top, it says "TITLE LINE". Below that, there are four fields: "Last Name: 1.....", "First Name: 2.....", "Age: 3.", and "Weight: 4..". At the bottom of the screen, there is a prompt line that reads: "Do You Want a (C)olumnar or (F)ree Form Report Type (C or F or H for Help). █".

Sample free form data entry screen

If you select a Free Form report, MINI-QUIKPRO II will display a Format Design Screen, similar to the one used in MINI-QUIKPRO I. At the bottom of the screen the prompt line shows four options: (E)dit Report, (P)rint Report Layout, (L)ook at Record Layout, and (D)one. Select by typing the first letter of the option, and press:



The "Look at Record Layout" option allows you to see the data screen layout from the Filing Program, so you can review the numbering of the different fields as you create and edit the report.

The option you will use most is "E." After you choose this, you will be asked for the line that you wish to work on. Enter a line number and press:



Then type in your information. Anything that you type on a line will be printed in that position on each page printed by the program. When you want to include information from the data file, you simply specify which field is to be used. Do this by typing:



Answer the prompt then at the bottom of the screen by typing the number of the field you wish to use. The number will then appear on the line in the report format. There will be shaded spaces showing how long that field is, so you can see how much room is allocated. Remember that you may use the "Look at Record Layout" option if you have forgotten what the field numbers are.

If you try to put too many characters on a single line, the program will beep and stop accepting characters. Simply backspace and re-write the line so that the information fits. When you are satisfied with a line, press:



and *MINI-QUIKPRO II* will ask for another line number. If you make a mistake and wish to change a line, simply type the number and the line over again.

N.B. If you press:



while typing on a line, you will abort the report design process and return to the *MINI-QUIKPRO II* main menu.

After the form has been designed to suit your needs, press:



when the program asks for a line number to work on. The program will return to the "E," "P," "L," and "D" options. You can print a copy of the report layout at this point, or you can do it later. Select "D" and *MINI-QUIKPRO II* will proceed to its program-writing sequence.

DESIGNING A COLUMNAR REPORT

The design procedure is slightly different for Columnar reports. The screen layout for your data file will remain on your screen, and you will be asked if you want to eliminate any fields from the report. Enter the numbers of the fields you wish to omit, and *MINI-QUIKPRO II* will mark those fields with asterisks (*) to show that they are not included. When you are finished, simply answer "N" for No when asked if you wish to eliminate any more fields.

Next give the headings for the columns that will be printed. You may enter a heading for each field in the report, but the heading may not be longer than the width of the data field in that column. If the heading is longer than the field (for example "Zip Code" for a

five-space field), the program will beep and refuse the extra characters.

```
1
2
3      PERSONNEL DATA REPORT
4      -----
5
6
7      Last Name: 1 _____
8      First Name: 2 _____
9
10     Age: 3 _____
11
12     Weight: 4 _____
13
14
15
16
17
18
19
20
21
22
<E>dit Report, <P>rint Report Layout, <L>ook at Record Layout, <D>one - |
```

Sample columnar data entry screen

The program next asks you to press the Enter key to enter your report title. When you do so, the bottom of the screen will go blank, allowing you a full 80 positions for your title. Be sure to center the title yourself with the Space Bar, and press the Enter key when your title is complete. This title will appear at the top of every page, along with the page number and the date.

If your screen has any numeric fields, you may now specify the ones you want totaled at the end of the report. As you select each one, by answering "Y" to the "Any Total Fields" prompt and then entering the field number, the field will fill with "T"s. When you are finished, answer the "Any Total Fields" prompt by typing:

N 

and you will proceed to the next step.

CREATING THE PROGRAM

Once you have designed your Free Form or Columnar report, *MINI-QUIKPRO II* will write your report program for you. *MINI-QUIKPRO II* will first ask for a name for the report program. The name must contain letters only, with a maximum of eight. You will then be asked for the letter of the drive that has the disk where the program will be written (you should make this the drive with your Filing Program in it, since this is where the data for reporting resides). *MINI-QUIKPRO II* will then ask if you want to print out a worksheet which shows the format of the report, lists the names for each field and (for a Columnar report) tells whether they will be totaled or not. Type in "Y" or "N" followed by the Enter key. Lastly, you are asked to mount the diskette to receive the report program in the appropriate drive, and press the Enter key to begin the program creation process. As


**SURE
TO CENTER
THE TITLE
YOURSELF
WITH THE
SPACE BAR**

 **YOU
MAY ALSO
LIST,
COPY,
AND
MODIFY
THE REPORT
PROGRAM**

MINI-QUIKPRO II creates your new program, it will keep you informed with screen messages. When program creation is complete, press the Enter key and you will return to the *MINI-QUIKPRO II* main menu. From here you can type:

2 

to exit *MINI-QUIKPRO II* and return to DOS.

RUNNING THE REPORT PROGRAM

You are now ready to run your report program. You may also list, copy, and modify it as you choose. With the disk containing your report program in the default drive, respond to the DOS prompt by typing:

PROGNAME 

where "progname" is the name of your report program, and the program will automatically load and run.

The reporting procedure is the same for both Free Format and Columnar reports. The program will display the data screen and offer three choices at the bottom: (G)et Record by Key & Print, (S)earch & Print, and (E)nd Program. These commands give you a great deal of flexibility, and you will find that you can use the same report format to produce a variety of useful reports.

If you choose "G," you will be asked for the value for the Key field. The report will only include those records that match this Key field. (The Key is the one specified when the data file program was created with *MINI-QUIKPRO I*.)

The "S" option allows you to select certain records to be included in the report. After you enter "S," you will be asked to enter the string to search for, or you can simply press the Enter key to report on all records in the file. If you elect to enter a search string, then only those records which contain a matching string anywhere in the record will appear on your report. Note that the entire record is searched for a matching string, not only a particular field within the record. When you press the Enter key, report printing will begin.

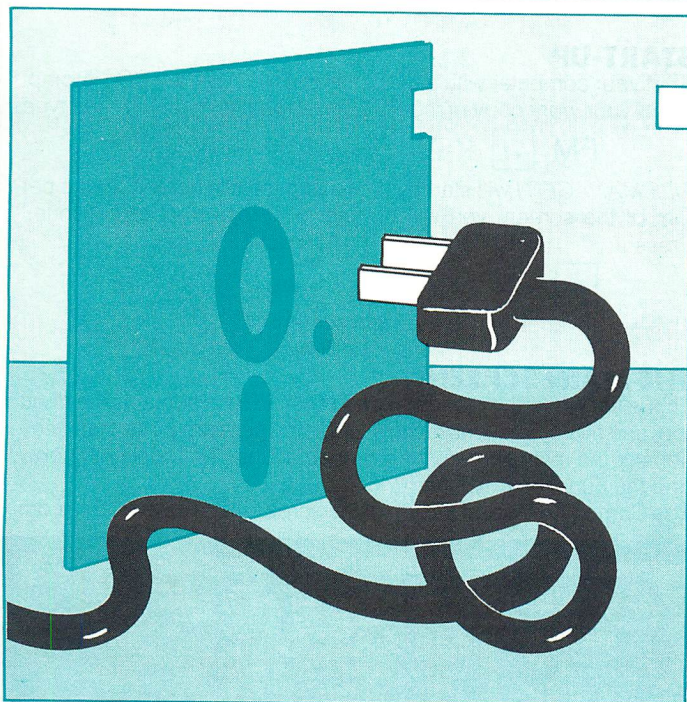
As the report starts to print, you may press any key to stop the report and return to the record selection options (the report will not stop printing until the title information has been printed). From the record selection options you can press:

E 

followed by another Enter key confirmation to exit your report program and return to DOS.

ABOUT THE AUTHOR

MINI-QUIKPRO, programmed by Skip Tamargo, is based on the comprehensive BASIC program writer QUIKPRO+, developed and sold by ICR FutureSoft, 1718 Kingsley Avenue, Orange Park, FL 32067. In addition to all the capabilities of MINI-QUIKPRO, the complete system offers sorting, record selection by field value, indexing and more. We commend Skip on his fine job of making the key features of QUIKPRO+ available to our readers. We hope to publish more work by this software author in future issues of PC Disk Magazine.



FILE MANAGER-PART I

By C-Level Software

Special Requirements: None

Files Used: FM.COM

FM.EXE

FM.HLP

FM.LOG

If your disk collection has grown larger than ten disks, you have probably found that a four-line label stuck on the corner doesn't tell you much about what is stored there. Changing or revising your files increases the problem. How can you tell which is the most recent version?

Certainly, DOS helps to some extent, since you can call up a Directory. But the file names scroll off the top of the screen; you must keep calling up the Directory in order to read it. If you instead compress the directory with the /W option, then you lose the date and size information. These problems are particularly troublesome if you are copying or erasing many programs on a disk.

FILE MANAGER I allows you to display the list of files from a disk and then scroll back and forth through the listing. You can search for a specific file, jump to the beginning or the end of the list, or move by a line or a screen at a time. Once you find a file you wish to work with, you may quickly copy, rename, or delete it. Two companion programs, to be published in the next two issues of PC Disk Magazine, will let you print and view any text file.

START-UP

Start your computer with a DOS disk in drive A. At the DOS prompt, insert your work copy of the PC Disk Magazine in drive A and type:

FM 

FILE MANAGER I will start by displaying the title screen. At the bottom of the screen, you will be told to "Press ESC to continue." Press:

 Esc

This will advance you to the main screen.

THE MAIN SCREEN

This is the working screen of FILE MANAGER I. It contains the directory and the instructions on how to use it. There are three major sections of the main screen: the Command Line, the Display Window, and the Function Key Line.

The Command Line, at the top of the screen, lists the available com-

```

FM : reName, Delete, Copy, Find, Read Dir, Help, Quit []
Drive = A      No. of Bytes Used = 315392      Number of Files = 25

```

NAME	EXT	SIZE	LAST UPDATE	
C	COM	128	01-01-88	01:21:00
CATALOG		6656	04-22-83	00:04:26
CHECKING DAT		1280	01-08-84	13:17:22
DATA1		6656	04-22-83	00:03:28
DATA2		128	04-22-83	00:04:09
LETTERS	BAK	1408	01-08-84	03:11:27
LETTERS	NEW	7552	04-22-83	00:02:22
M	COM	128	01-01-88	01:21:00
MAIL		7552	01-08-84	04:01:00
MAILMAGE OUR		11520	03-31-83	00:00:00
MISC	A	7552	01-08-84	13:15:13
MISC	B	1408	01-01-88	01:59:17
MOWS	COM	21376	01-01-88	00:09:12
PROGRAMS		1152	01-08-84	03:22:03
PROGRAMS B		6656	01-08-84	03:10:23
TESTS	NEW	18304	11-23-83	11:01:27
TESTS	OLD	18304	04-22-83	00:06:05
WINSTALL	COM	1152	03-02-83	00:00:00
WINSTALL OUR		38528	03-02-83	00:00:00
WRITING	JAN	6272	01-01-88	01:01:03
WS	COM	21376	08-26-83	09:50:16

```

F1 First File F2 Last File F5 Quit

```

Up to 22 files can be displayed

mands: reName, Delete, Copy, Find, Read dir, Help, and Quit. Execute these by typing their corresponding capital letters.

The Display Window below the Command Line shows the list of files on a disk, as well as other useful information. On its top line, the screen tells which drive is being displayed, the number of bytes

used on the disk, and the number of files. The next line displays the headings for the list of files: NAME, EXTension, SIZE, and the date and time of the LAST UPDATE. The rest of the display window contains the actual directory. Each line contains the information for one file. The screen will display as many as 22 files at one time in alphabetical order.

The Function Key Line at the bottom lists the available function keys and their actions.

PROGRAM COMMANDS AND FUNCTION KEYS

The directory initially displayed by the program was probably a directory of the disk in the default drive, that is, the *PC Disk Magazine* diskette itself, including the *FILE MANAGER I* files. To look at another disk, use the Read dir command. Type:

R

and *FILE MANAGER I* will ask for the letter of the drive that has the disk you wish to examine. To look at the disk in drive B, type:

B

and *FILE MANAGER I* will examine that disk and display the file directory on the screen. The *FILE MANAGER I* program is now in memory, so you may remove the program disk and use that drive for a disk you wish to examine.

Once the directory is displayed, you must position the cursor in order to select a file to work with. You may move up or down one line at a time by pressing:



You may also jump to the next screen by pressing:



or back one screen by pressing:



Pressing:



returns you to the first file on the current display screen, while pressing:



accesses the last file. Two function keys also move the cursor. The F1 key relocates it to the first file in the directory, and the F2 key moves it to the last file in the directory.

The Find command allows you to go directly to a specific file if you know the file's name. To use this command, type:

F

FILE MANAGER I will ask for the filename to search for. You may type up to eight characters for the filename, plus an extension of up to three characters. Then press:



**WHEN
YOU
CANNOT
REMEMBER
THE EXACT
NAME
OF A FILE,
SIMPLY
TYPE IN
THE FIRST
FEW
LETTERS**

FILE MANAGER I will search for that file and move the cursor to it on the display.

If the program cannot locate the file by the given name, it will leave the cursor on the file that immediately precedes it in alphabetical order. This feature helps when you cannot remember the exact name of a file. Simply type in the first few letters of the filename, and *FILE MANAGER I* will take you to the beginning of all the files with similar names.

Once you have selected a file to work with, you may use the other commands: reName, Delete, and Copy. These are similar to the associated commands in DOS, but are easier to use because your directory display remains on the screen, and you can quickly move to other files and execute the commands again. *FILE MANAGER I* updates the display whenever a change is made, so you will not have to refer to the directory each time.

The reName command allows you to change the name of the selected file. Type:

N

and *FILE MANAGER I* will ask for the new filename. You may use any valid filename (see the IBM PC-DOS manual for details). You may not use the name of a file that already exists in the current directory; if you do, the program will give an error message and abort the command. This safeguards against accidentally deleting files.

The Delete command erases the chosen file from the disk.

Type:

D

FILE MANAGER I will ask you if you indeed wish to delete that file. Confirm the command by answering Yes or No. This is an irreversible decision, so if you do not wish to delete the file, answer No or press:

F5

to cancel the command.

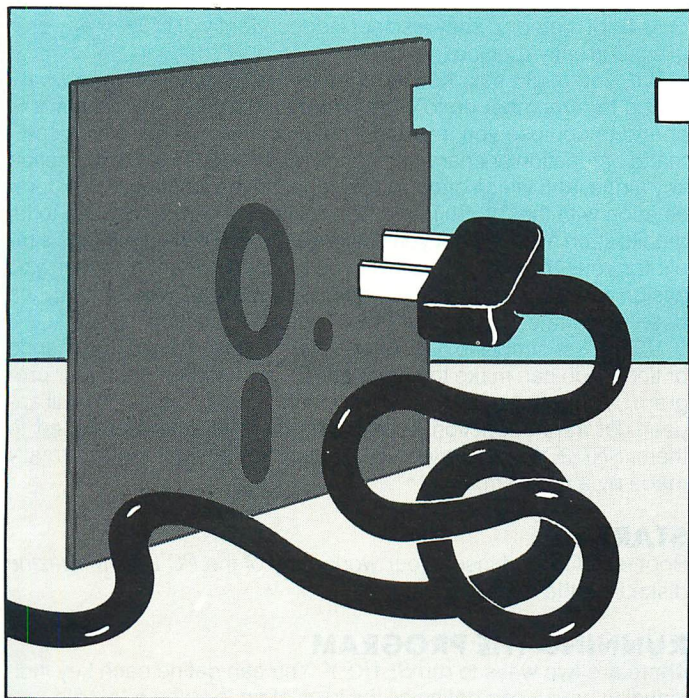
You may copy a file with the Copy command. Type:

C

and *FILE MANAGER I* will ask for the destination filename. You may specify a drive in addition to the filename (for example, B:BASIC.COM), in order to copy the file onto a disk in the designated drive. If you do not specify the drive, the file will be copied onto the disk in the default drive.

If the destination filename does not already exist, the file will be copied intact under the new name. If it does exist, you have four choices: Append, Replace, Help, and Quit. Make your selection by typing the first letter of the option you choose. The Append command will add the input file to the end of the existing destination file. This command can be useful in combining a number of small files into a large file. The Replace command will replace the existing file with the input file.

The remaining two commands are Help and Quit. Help displays a screen explaining all the currently available commands, special keys, and function keys. The Quit command (or the F5 function key) ends *FILE MANAGER I* and returns you to DOS.



SETKEY

By Bert Tyler

Special Requirements: None

Files Used: SETKEY.EXE

Your PC's ten function keys may just be the last frontier of your keyboard. With very little effort, you can exercise ingenuity and practicality by programming these keys to produce certain frequently used commands or lines on demand. SETKEY is a utility which allows you to assign up to 40 commands, functions, or strings of characters to those keys. The assignments are made in DOS and will work with any program.

SETKEY also supports assignment files, so you can get up a separate set of function key assignments for DOS, WordStar, VisiCalc, or any other frequently used program. Then you need only call up that file, and all your function keys will be programmed and ready to use.



BACKGROUND

SETKEY provides forty different function key assignments by using the function keys alone, and in combination with the Alt, Shift, and Control keys. The use of these three additional key combinations allows each function key to have up to four assignments, depending on whether it is struck alone or in combination with one of these other keys. All 40 *SETKEY* statements are loaded into DOS and require only 4K of memory. They also act independently of DOS or any program currently running.

But, you might ask, how do I remember which key does what? Trying to remember up to 40 different function key assignments is bound to confuse you, making it difficult to remember which command or function or character string you decided to set to a function key alone, and which ones you assigned to the function key in combination with the Alt, Shift and Control keys. There's no need to let details such as these get you flustered. *SETKEY* makes things simple for you. The program allows you to insert comments when you assign functions to keys providing reminders of what action has been designated for each of the 40 possible function keys.

SETKEY is simple to use. After assigning the desired commands or lines, you can make them appear on your screen or in your program by simply pressing the appropriate function key. They will appear not as the function keys but as the characters assigned to them. *SETKEY* will override any function key assignments normally made by a program.

START-UP

Boot up DOS and insert your work copy of the *PC Disk Magazine* diskette in the default drive.

RUNNING THE PROGRAM

There are two ways to run *SETKEY*. You can define each key individually, or you can define all the keys at once using a text file.

Assigning individual keys is easy. Once DOS is loaded and you have inserted the disk with *SETKEY* on it, respond to the system prompt by typing:

SETKEY Fx = statement 

where "x" is a number from 1 to 10 and "statement" is any string you want to assign. Let's look at a good example of how you might use this procedure to assign a statement to a key. Say x = 1 and statement = DIR A:. Now the F1 key will print out DIR A: on the screen when pressed, exactly as if it had been typed from the keyboard. You can assign any value to any key with this statement. To define the Alt, Shift, or Control keys in conjunction with the function keys, type:

SETKEY AFx = statement 

for the Alt key combination, or

SETKEY SFx = statement 

for the Shift key combination, or

SETKEY CFx = statement 

for the Control key combination, where "x" is again a number from 1 to 10 and "statement" the string to be assigned. You can set all 40 keys in this way and they will stay defined until you reboot DOS.

If at any time you wish to change the definition of a key, you need only redefine it while in DOS. You can turn individual keys off with the statement:

SETKEY F1 = 

or you can turn them all off by typing:

SETKEY OFF 

Turning a function key "off" does not disable it completely, but returns it to its default value, allowing it to then be assigned new values by other programs. In order to display the current function key assignments made by *SETKEY*, type:

SETKEY ? 

and all settings will be listed on your screen.

In order to use *SETKEY* with a file, you must first create a text file in DOS using *EDLIN* or any text editor.

CREATING A FILE WITH EDLIN

To create a text file of function key assignments on your IBM PC, put a diskette with *EDLIN.COM* on it in your default drive and type:

EDLIN filename.KEY 

where "filename" is a name of your choice (e.g. "VISI" or "WS"). An asterisk will appear as a prompt. Type:

I 

to enter the insert text mode. Now define each key next to each line number prompt. The following is an example of DOS commands for *SETKEY*:

1. F1 = DIR A:
2. F2 = DIR B:
3. F3 = DATE
4. F4 = TIME
5. F5 = TYPE
6. F6 = COPY
7. F7 = DISKCOPY
8. F8 = DISKCOMP
9. F9 = CHKDSK
10. F10 = BASICA

To end an *EDLIN* file, type:

Ctrl Z 

E 

Once you have a text file for *SETKEY* you can use it by typing, next to the DOS prompt:

SETKEY FROM filename.KEY 

Now all your function keys are set to that file's key assignments.



**AT ANY TIME
YOU WISH
TO CHANGE
THE
DEFINITION
OF A KEY,
YOU NEED
ONLY
REDEFINE IT
WHILE IN
DOS**

Another feature of *SETKEY* is the ability to add comments as you build a file. When you create a text file for WordStar or DOS, you might forget what a particular function does. If you wish to prevent this, just follow the *SETKEY* instruction with four periods " " and type any comment you wish. When you call up that file for use, your comment will be displayed, but it will have no effect on your programs.

SPECIAL SYMBOLS

SETKEY provides certain special symbols that will perform particular functions. The "^" (carat) sign within a definition acts as the Control key and the "#" (pound) sign acts as the Enter key. If you assigned the statement *RUN #* to one of your keys, it would not only print *RUN* on the screen, but it would also enter it. Similarly, if you assigned the statement *^K^D* to a key, it would be equivalent to pressing the Control and K keys simultaneously, then the Control and D keys simultaneously. If you would like to use either of these special symbols without performing their associated functions, you will have to place the carat sign before them. For example, *^ #* will signify #, not the Enter key, and *^ ^* will signify ^ rather than the Control key.

EXITING

The only time you are ever actually in the *SETKEY* program is when you define a key with the command *SETKEY*. Once the command is executed, you automatically exit the program, leaving the key assignment(s) in DOS. To eliminate the key definitions, type:

SETKEY OFF 

Note also that *SETKEY* merely types out a string of characters. Whether or not this string of characters will be interpreted as a command will depend on the context in which it is used. For example, if you assign a DOS command to a function key, and then press that key while in edit insert mode, the DOS command will not be performed. Rather, the letters of the command will be treated as text input by the editing software.

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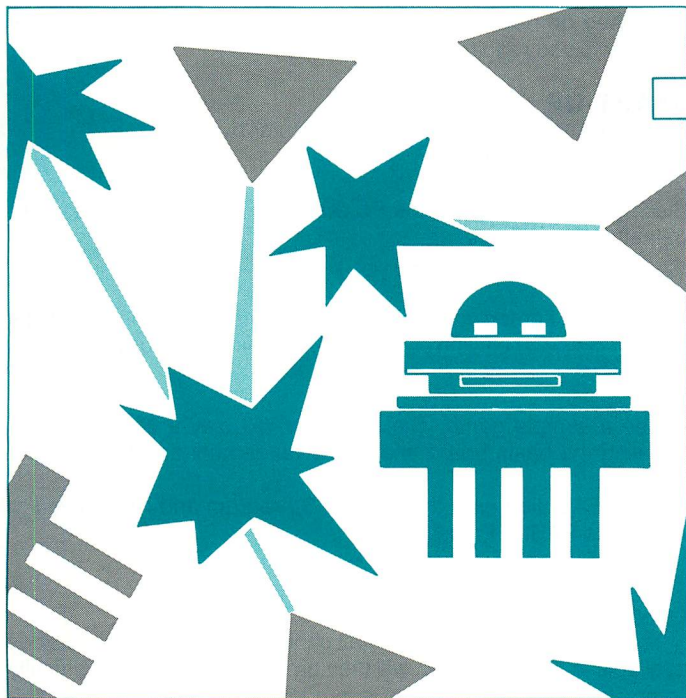
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JIG JAGS 1

By Ron Dubren

Programmed by Infocenter Software

Special Requirements: None

Files Used: JIGJAGS.BAS

PUZZLE.SMP

PUZZLE1

PUZZLE2

PUZZLE3

What do you get when you cross a jigsaw puzzle with a crossword puzzle? You get a JIG JAGS, of course—a game which combines the spatial and verbal dexterity necessary to solve either of these types of puzzles. This clever word game is the first installment of a new PC Disk Magazine feature. Issues 6 and 7 will both bring you three new puzzles for this novel word challenge.

BACKGROUND

JIG JAGS is played with a 7-by-7 square crossword puzzle grid that has been broken up into 16 puzzle pieces. The object of the game is

to arrange those pieces on the empty 7-by-7 grid so that they fit together to form complete words both down and across; in other words, a complete and valid crossword puzzle. There are no crossword puzzle-type clues—you must guess what the words are by looking at the letters only. So, besides resembling a crossword puzzle and a jigsaw puzzle, *JIG JAGS* is somewhat like an anagram. At the end of each timed game, you will be assigned a ranking based on how long it took you to solve the puzzle, and how much help you required.

START-UP

Load Advanced BASIC into your computer by typing:

BASICA 

Place your work copy of the *PC Disk Magazine* diskette into your default drive and type:

RUN "JIGJAGS" 

After the title screen you will see the main menu, called the Options Screen. If you're playing *JIG JAGS* for the first time, press:

S

to see a sample game. The computer will play a sample game, showing the basic board and grid arrangement and the fit of the pieces.

The "E" option exits the *JIG JAGS* program and returns you to Advanced BASIC. Pressing:



begins a game.

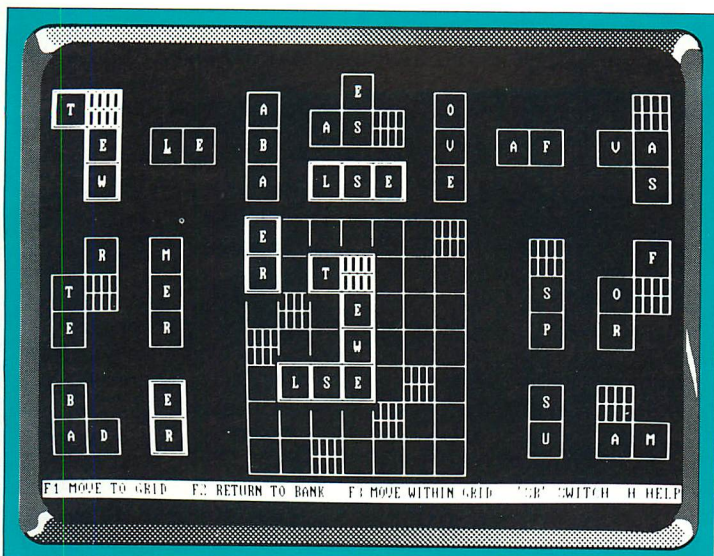
To play *JIG JAGS*, you must first choose one of the three puzzles available in this issue. You will then be asked to choose a difficulty level. "Hard" is the beginning level. Only *JIG JAGS* pros should attempt the "Very Hard" level. At the "Very Hard" level, the puzzle grid is totally blank—no blocked-out squares are shown—so you have no landmarks to help you place pieces on the puzzle grid. Select a level and plunge in.

THE GAME SCREEN

The program will first construct its game screen. In the center is the grid upon which you will try to arrange the pieces of the puzzle. Spread around the sides and top of the game screen is the puzzle "Bank"—the 16 pieces of the fragmented puzzle. Each piece contains two to five squares, and the squares enclose either letters or crosshatching (to signify a blocked-out square). Note that the pieces are already aligned on their own axes, unlike pieces in a jigsaw puzzle, so you don't have to figure out which end is up.

You can move the cursor throughout the grid or the bank by using the directional arrows on the numeric keypad. The Space Bar will toggle the cursor back and forth between the grid and the bank.

To work on a particular piece in the bank, move the cursor to that piece. The squares of that piece will begin flashing, and the cursor will land on a specific square in the piece. This is called the "index square," and is used to "pin" a piece from the bank onto the grid.



The game screen

PLAYING JIG JAGS

There are three procedures for moving pieces in *JIG JAGS*. To move a piece from the bank to the grid, move the cursor to that piece in the bank and press:

F1

A second cursor will appear in the grid. Move it to the square on the grid where you want to "pin" the piece's index square. (The first cursor, remaining in the chosen piece in the bank, reminds you which is the index square.) Once you have located the cursor in the proper grid square, press the F1 key again and the move will be made. A flashing duplicate of the piece will appear on the grid.

Once the move is complete, you may either use the arrows to move the cursor elsewhere on the grid or use the Space Bar to move it back to the bank. This movement will stop the flashing of the recently-moved piece. The piece will retain its double outline on the grid and in the bank, to set it apart from the unused pieces.

From now on, any time you move the cursor to any square of this piece on the grid or in the bank, the piece will flash in both locations. This is useful when the grid starts getting full and you want to know which piece contains a certain letter.

To move a piece from the grid back to the bank, move the cursor to any square of the piece on the grid and press:

F2

The piece will disappear from the grid and reappear in the bank. The cursor will remain on the grid.

You may also move a piece from one location to another within the grid. Move the cursor to any square of the piece on the grid. Press:

F3

**USE
THE SPACE
BAR TO MOVE
THE
CURSOR
BACK TO THE
BANK**

**IN
THE
"VERY
HARD"
GAME YOU
GET ONE
CLUE FREE**

and move the cursor to the new point in the grid where you want the index square of the piece to appear. Press F3 again. The move will be made and the game will stop for a moment while the computer reformats the board.

If you try to move a piece to a location where it would exceed the boundaries of the grid or another piece, or if you try to move a piece with a blocked-out square to a position lacking a corresponding blocked-out square, you will receive an error message.

SCORING

You play against the clock in *JIG JAGS*. For every 15 minutes that you work on the puzzle, you drop one level in the skill rating scale, which runs from "Grand Master" (under 15 minutes to solve the puzzle) to "Unranked Amateur" (over 150 minutes). If you want to check your progress at any point during the game, put the cursor in the bank and press:

T

Your elapsed time will appear at the bottom of the screen. If you have chosen to play at the "Very Hard" level, you get a bonus 15-minute period.

If you find that *JIG JAGS* is a little too tough for you, put the cursor in the bank and press:

C

to get a clue. The program will take one piece from the bank and place it correctly on the grid. You will not be able to move that piece once it is placed, and there is a scoring penalty: you will drop one skill level for every clue you request. In the "Very Hard" game you get one clue free.

HELP

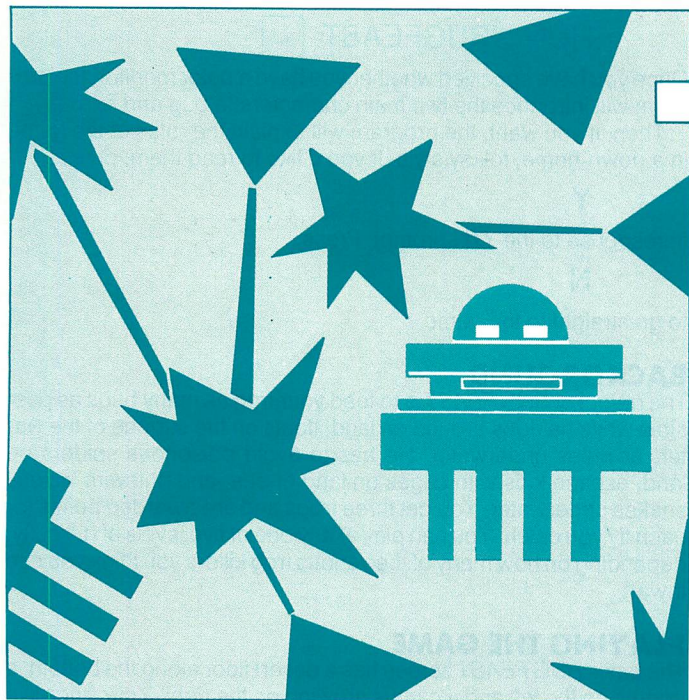
A list of the playing options (F1, F2, F3, and the Space Bar toggle) is displayed at the bottom of the game screen as you play. For an explanation of other commands, place the cursor in the bank and press:

H

to access a help menu. This menu will explain the "C" and "T" keys, and the keys used to end the game.

EXITING

Pressing "O" will cancel the current game and return you to the Options Screen. Pressing "Q" will cancel your current game and exit the program to BASIC. Press "S" to save the current game as it stands in a file on the program disk. (Since the *PC Disk Magazine* diskette is write-protected, this will work only if you have copied the program to another diskette.) When you start up *JIG JAGS* at a later time, this game will be automatically called up again, at the same level of completion and elapsed time as when you saved it. If you no longer wish to continue that game, press "O". The saved file will be deleted, and you can begin a new game.



BUG FEAST

By Paul Somerson

Special Requirements: None
Files Used: BUGFEAST.BAS

BUG FEAST tells the sad story of a little green critter called a frog. He's stranded in the desert, stuck between a rotten cactus plant and a foul-smelling puddle with who knows what living in it. It's only a matter of time before the poor feller gets bitten by a water snake or a spider or gets caught by mean, frog-hating children. This little hopper just tries to last as long as he can, keeping his strength up by eating flies. Only you can save him from the cruel, frog-eat-frog world.

 **THE
FROG
CAN HOP
ON SAND
OR WATER,
BUT
HOPPING
INTO THE
CACTUS IS
FATAL**

START-UP

To play this arcade-style single-player game, load Advanced BASIC into your PC by typing:

BASICA 

Then place your work copy of the *PC Disk Magazine* diskette into your default drive and type:

RUN "BUGFEAST" 

Once you have specified whether you have a color monitor, the program will introduce the two main characters: a bug and a frog.

Then, if you want, the program will explain the rules of the game in a down-home, folksy style. If you'd like to read them, press:

Y

in response to the Y/N prompt. Press:

N

to go straight to the game.

BACKGROUND

The object of *BUG FEAST* is to feed your frog as many bugs as possible while he hops around on land, floats on the surface of the water, or hides underwater. He has to avoid poisonous spiders on land, escape kids with cages on land or sea, and outswim vicious snakes underwater. You get three frogs and are awarded points for each fly you catch. You can play at any one of five levels of difficulty, depending on how many of the various frog killers you think you can thwart.

PLAYING THE GAME

The basic *BUG FEAST* screen has a desert floor along the bottom, a puddle on the left and a cactus growing on the right. Your frogs live on the right side of the cactus and hop out, one at a time, to take their turns. The F9 and F10 keys move your frogs one hop to the left and right, respectively. They can hop on sand or water, but hopping into the cactus is fatal.

Flies buzz in the hot desert air. To catch a fly, press:

F8

This key will make your frog stick out his tongue to swallow one, but it's not easy because the flies move very fast. If you miss continually, you can try using an extra-long tongue. Pressing:

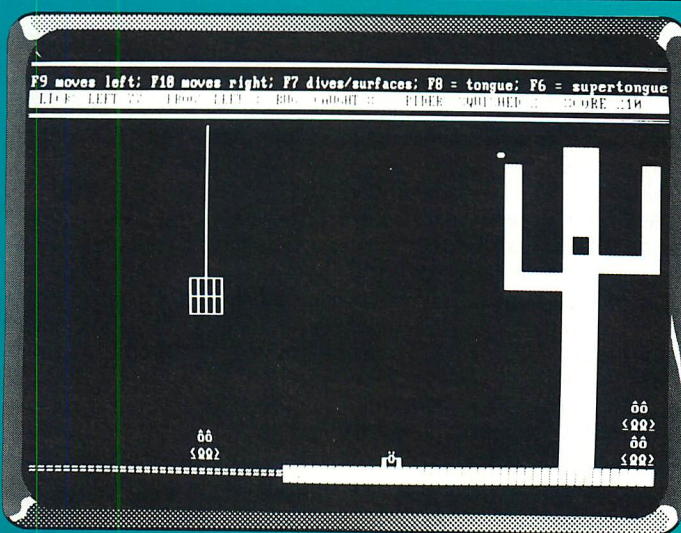
F6

will cause your frog to stick out this "supertongue." But be careful—you can't lap at flies indiscriminately. You have a limited number of "licks" and a lick counter keeps track of them. Each game begins with 50 licks. It costs one lick each time the frog uses his normal tongue, and five licks when he uses the longer tongue. Note that you gain four licks each time you catch a fly.

The three frog killers roam the desert in search of prey. Poisonous spiders can sneak out from the cactus and bite the unsuspecting frog. The frog can avoid them in the safety of the pond, or he can hop on them and squash them. On the desert floor or on the surface

of the pond, he is also vulnerable to attacks from children who will try to drop cages on him. He can hop out of the way of descending cages, or dive under the water. Do this by pressing:

F7



Dodging the dangers keeps everyone hopping

Once the danger has passed, the F7 key will also allow him to surface again. Hiding under water is itself not entirely safe, because a poisonous snake may appear at the left side of the pond. Avoid snakes by surfacing quickly.

SCORING

Every time your frog catches a bug you get 25 points (and more licks). Every time he kills a spider you get five points. And, every so often, when the frog is underwater, a strange creature appears in a hole in the cactus. This signals a bonus period during which bugs are worth 250 points. Move your frog to the surface of the pond quickly to catch flies before the odd creature hides again.

Across the top of the screen is a score card that shows how many licks and how many frogs you've got left, how many bugs you've caught, how many spiders you've killed, and your current score. This box also lists the valid function keys and their operations.

When you've lost three frogs, the game will stop. You can then quit by pressing:

Q

or choose to play another game by pressing any other key.

**MOVE
YOUR FROG
TO THE
SURFACE OF
THE POND
BEFORE THE
ODD
CREATURE
HIDES
AGAIN**



EXPANDING THE CODE

When you list any of the BASIC programs on your *PC Disk Magazine*, you will find that the code is often quite dense, and there is a conspicuous scarcity of comments. This does not represent the latest standard in BASIC coding. We would have loved to space the code out in an eye-catching fashion, and document it thoroughly with comments.

Unfortunately, the line numbers and comments take up storage space, and storage space is a precious resource to us and our readers at *PC Disk Magazine*. So we were forced to economize on space in order to maximize our product offering. To unravel the BASIC code, we suggest that you put it in a form that you can edit with some system editor (EDLIN or WordStar, for example) and then expand the spacing. To do this, you must convert the program from its form on the *PC Disk Magazine* diskette to a standard ASCII file, which an editor can manipulate. The procedure for performing this conversion is to load the program from the *PC Disk Magazine* diskette into BASIC, and then save it with the A option, to save it as an ASCII file, onto another diskette. Specifically, first load Advanced BASIC by typing:

BASICA 

then put the *PC Disk Magazine* diskette in the default drive. Type:

LOAD"programname" 

where "programname" is the name of a BASIC program on the *PC Disk Magazine* diskette. Lastly, replace the *PC Disk Magazine* diskette with a work diskette and type:

SAVE"programname", A 

An ASCII version of the program will now be written on this work diskette. You can then exit BASIC and call this program file into an editor. Use the editor to start a new line at every colon in the file. This will make the code much easier to read and the logic, thereby, more apparent.



PROBLEM RECOVERY

There really is not a great deal to say about problem recovery with *PC Disk Magazine*. If you use this software on the right equipment (IBM PC or PC-XT) running the appropriate system software. (DOS 1.1 or 2.0, Microsoft Advanced BASIC 1.1 or 2.0) you should experience no problems. Nevertheless, a few comments may resolve some more obvious difficulties.

Any BASIC program can be interrupted at any time by pressing:



If you do not see the OK message immediately, indicating that you are back in BASIC, press these keys again. This is a rather drastic but effective way of regaining control of the computer. You won't damage any of the programs in this way, since they're still intact on the diskette. However, you will lose any data you entered while the program was running.

If you interrupt a BASIC program you may find that the function keys no longer perform as they had before starting the program. This is because many *PC Disk Magazine* programs reset the function keys during execution, then restore the original settings upon completion. An interrupt causes an abnormal termination of a program, so the function keys are not restored. To correct this situation, simply exit from BASIC and then return to BASIC.

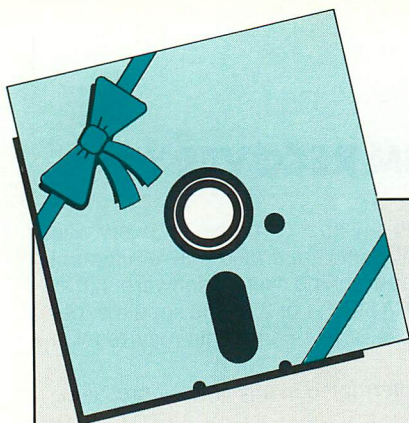
You may find at times that the cursor control keys are not working as they should. This is because the keys are not in cursor control mode. The key that switches these keys between numeric mode and cursor control mode is the Num Lock Key. So to restore the keys to cursor control mode, press:




If you try to send something to the printer when there is no printer, or when the printer is off or offline, you will hang the system. The computer will just sit there and will not respond to any keys pressed. After a few seconds you may get a BASIC error message indicating that the device was unavailable. The program that was running has been aborted, and you will be left in BASIC. If the computer does not put out any message, but just remains hung, you will have to say good-bye to whatever you were doing and re-boot your system.

Though we hope you will never need it, if you should find a "bug" in a *PC Disk Magazine* program, the address to write to is:

PC Disk Magazine
Problem Recovery
One Park Avenue
New York, N.Y. 10016
(212) 725-7770



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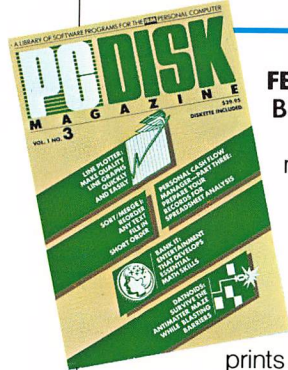
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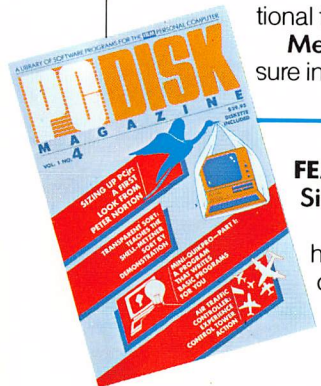
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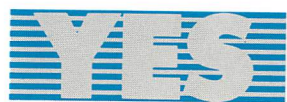
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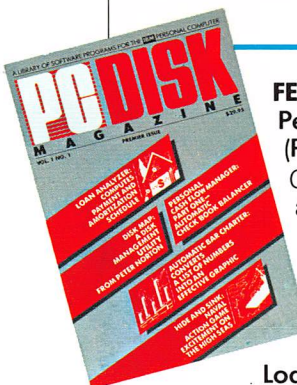
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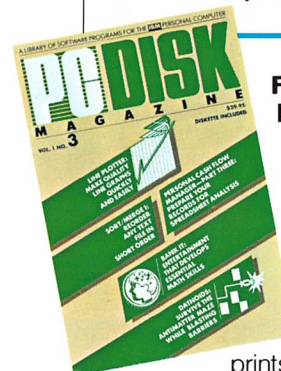
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